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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/721,759

11/26/2003

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Q78711

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23373 7590 11/05/2007  
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EXAMINER

YUEN, KAN

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

11/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/721,759

Applicant(s)

KIM, JUN-WHAN

Examiner

Kan Yuen

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-22 and 24-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 8-11, 22 and 24-27 is/are allowed.
- 6) ☒ Claim(s) 1-5, 12-21, 28-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

***Response to Arguments***

1. Applicant's arguments, see page 18 of the remark, filed on 8/29/2007, with respect to the rejection(s) of claim(s) 1, 12, 17, and 33 under 103 rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly cited paragraphs in the existing references Sherman (Pub No.: 2003/0161340), in view of Haartsen (Pat No.: 6973067).

***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 33-35 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 33-35 lack the proper preamble for a computer readable medium claim. This subject matter is not limited to that which falls within a statutory category of invention because it is not limited to a process, machine, manufacture, or a composition of matter. Correction is required. An example of an acceptable preamble for a computer type claims is "A computer readable medium encoded with a computer executable instructions, the instructions comprising". For further information on statutory computer type claims, see MPEP section 2100.

***Claim Rejections - 35 USC § 103***

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 12, 17, 28, 33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman (Pub No.: 2003/0161340), in view of Haartsen (Pat No.: 6973067).

For claim 1, Sherman disclosed the method of a controlled contention frame transmitter, which when making a polling list is requested, generates a controlled contention frame and transmits the controlled contention frame to stations on a network through a predetermined channel using a broadcast method after a period of time corresponding to a priority inter-frame space lapses since receipt of the request of making a polling list (see paragraph 0044, lines 1-7, and see fig. 1, fig. 2a); As shown in fig. 2a, there is a space between 206 and 208, so we can interpreted that as the priority

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inter-frame space. Referring in fig. 1, the HC monitoring plurality of MS in the WLAN; a reservation request frame receiver, which receives a reservation request frame from each of the stations through the predetermined channel as a response to the controlled contention frame during a controlled contention interval designated by the controlled contention frame (see paragraph 0048, lines 1-10, and paragraph 0050, lines 1-10, see fig. 2a). In response to the reception of the CC frames, the plurality of mobile station responded by generate and transmit a resource reservations frames back to the receiver of the HC; a polling list making unit, which when the reservation request frame receiver receives the reservation request frame, allocates a poll frame transmission sequence to the stations (see paragraph 0008, lines 1-30, and fig. 1). As shown the Access point 105 is serving plurality of mobile stations 101-103, The HC that coupled with the AP 105 allocates bandwidth among the mobile station contenders 101-103 after the HC received the RR frames from each of the mobile stations 101-103. However, Sherman did not disclose the method of from which the reservation request frame is received, using a first come first serve method based on a sequence in which reservation request frames arrive and makes a polling list comprising the poll frame transmission sequence. Haartsen from the same or similar fields of endeavor teaches the method of from which the reservation request frame is received, using a first come first serve method based on a sequence in which reservation request frames arrive and makes a polling list comprising the poll frame transmission sequence (see fig. 4A, and column 6, lines 16-44). As shown in the reference, the reservation is established based on first come first served. Thus, it would have been obvious to the person of ordinary

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skill in the art at the time of the invention to use the method as taught by Haartsen in the network of Sherman. The motivation for using the method as taught by Haartsen in the network of Sherman being that it gives reliable service to every contending stations.

Regarding claim 12, Sherman disclosed the method of a coordinator polling list making apparatus, which when making a polling list is requested, generates a controlled contention frame and transmits the controlled contention frame to stations on a network through a predetermined channel using a broadcast method after a period of time corresponding to a priority inter-frame space lapses since receipt of the request of making a polling list, and when a reservation request frame from each of the stations is received as a response to the controlled contention frame through the predetermined channel during a controlled contention interval designated by the controlled contention frame, allocates a poll frame transmission sequence to the stations (see paragraph 0043, lines 1-8, paragraph 0044, lines 1-8, paragraph 0047, lines 1-12, and paragraph 0048, lines 1-10, and fig. 1). As shown in fig. 1, the HC is the coordinator polling list making unit, which generates a CC frame to the contending mobile stations 101-103 with predetermined channel 104. After the reception of the CC frame, the mobile stations generate a RR frame back to the HC for reservations; and a station polling list making apparatus, which when the controlled contention frame is received through the predetermined channel from the coordinator polling list making apparatus, contends for use of the predetermined channel according to a user priority value of a data frame during the controlled contention interval designated by the controlled contention frame so as to acquire an exclusive right of using the predetermined channel, and when the

exclusive right is acquired, generates a reservation request frame as a response to the controlled contention frame and transmits the reservation request frame to the coordinator polling list making apparatus through the predetermined channel (see paragraph 0047, lines 1-10, and 0048, lines 1-10). As shown in the reference, after the receipt of CC frame, the station responded by transmitting a RR frame. The station gained the exclusive right to transmit the RR frame in the CCI based on the priority. However, Sherman did not disclose the method of from which the reservation request frame is received, using a first come first serve method based on a sequence in which reservation request frames arrive and makes a polling list comprising the poll frame transmission sequence. Haartsen from the same or similar fields of endeavor teaches the method of from which the reservation request frame is received, using a first come first serve method based on a sequence in which reservation request frames arrive and makes a polling list comprising the poll frame transmission sequence (see fig. 4A, and column 6, lines 16-44). As shown in the reference, the reservation is established based on first come first served. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Haartsen in the network of Sherman. The motivation for using the method as taught by Haartsen in the network of Sherman being that it gives reliable service to every contending stations.

Regarding claim 17, Sherman disclosed the method of when making a polling list is requested, generating a controlled contention frame and transmitting the controlled contention frame to stations on a network through a predetermined channel using a broadcast method after a period of time corresponding to a priority inter-frame space

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lapses since receipt of the request of making a polling list (see paragraph 0044, lines 1-7, and see fig. 1, fig. 2a); As shown in fig. 2a, there is a space between 206 and 208, so we can interpreted that as the priority inter-frame space. Referring in fig. 1, the HC monitoring plurality of MS in the WLAN; receiving a reservation request frame from each of the stations as a response to the controlled contention frame through the predetermined channel during a controlled contention interval designated by the controlled contention frame (see paragraph 0048, lines 1-10, and paragraph 0050, lines 1-10, see fig. 2a). In response to the reception of the CC frames, the plurality of mobile station responded by generate and transmit a resource reservations frames back to the receiver of the HC. However, Sherman did not disclose the method of from which the reservation request frame is received, using a first come first serve method based on a sequence in which reservation request frames arrive and makes a polling list comprising the poll frame transmission sequence. Haartsen from the same or similar fields of endeavor teaches the method of from which the reservation request frame is received, using a first come first serve method based on a sequence in which reservation request frames arrive and makes a polling list comprising the poll frame transmission sequence (see fig. 4A, and column 6, lines 16-44). As shown in the reference, the reservation is established based on first come first served. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Haartsen in the network of Sherman. The motivation for using the method as taught by Haartsen in the network of Sherman being that it gives reliable service to every contending stations.



Regarding claim 28, Sherman disclosed the method of when making a polling list is requested, generating a controlled contention frame and transmitting the controlled contention frame to stations on a network through a predetermined channel using a broadcast method after a period of time corresponding to a priority inter-frame space lapses since receipt of the request of making a polling list, and when a reservation request frame from each of the stations is received as a response to the controlled contention frame through the predetermined channel during a controlled contention interval designated by the controlled contention frame, allocating a poll frame transmission sequence to the stations (see paragraph 0043, lines 1-8, paragraph 0044, lines 1-8, paragraph 0047, lines 1-12, and paragraph 0048, lines 1-10, and fig. 1). As shown in fig. 1, the HC is the coordinator polling list making unit, which generates a CC frame to the contending mobile stations 101-103 with predetermined channel 104. After the reception of the CC frame, the mobile stations generate a RR frame back to the HC for reservations; when the controlled contention frame is received through the predetermined channel, contending for use of the predetermined channel according to a user priority value of a data frame during the controlled contention interval designated by the controlled contention frame so as to acquire an exclusive right of using the predetermined channel, and when the exclusive right is acquired, generating a reservation request frame as a response to the controlled contention frame and transmitting the reservation request frame to the coordinator polling list making apparatus through the predetermined channel (see paragraph 0047, lines 1-10, and 0048, lines 1-10). As shown in the reference, after the receipt of CC frame, the station

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responded by transmitting a RR frame. The station gained the exclusive right to transmit the RR frame in the CCI based on the priority. However, Sherman did not disclose the method of from which the reservation request frame is received, using a first come first serve method based on a sequence in which reservation request frames arrive and makes a polling list comprising the poll frame transmission sequence. Haartsen from the same or similar fields of endeavor teaches the method of from which the reservation request frame is received, using a first come first serve method based on a sequence in which reservation request frames arrive and makes a polling list comprising the poll frame transmission sequence (see fig. 4A, and column 6, lines 16-44). As shown in the reference, the reservation is established based on first come first served. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Haartsen in the network of Sherman. The motivation for using the method as taught by Haartsen in the network of Sherman being that it gives reliable service to every contending stations.

Regarding claim 33, Sherman disclosed the method of computer readable recording medium having embodied therein a computer program (see paragraph 0047, lines 1-15). Its obvious to a person of ordinary skill in the art to write an software to execute the functions disclosed in claim 17.

Regarding claim 35, Sherman disclosed the method of computer readable recording medium having embodied therein a computer program (see paragraph 0047, lines 1-15). Its obvious to a person of ordinary skill in the art to write an software to execute the functions disclosed in claim 28.

6. Claims 2-4, 13-15, 18-20, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman (Pub No.: 2003/0161340), in view of Haartsen (Pat No.: 6973067), as applied to claims 1, 12, 17, and 28 above, and further in view of Yew et al. (Pub No.: 2003/0108059).

For claims 2, and 18 Sherman disclosed the method of a poll frame transmitter, which transmits a poll frame to each of the stations, having transmitted the reservation request frames that are received by the reservation request frame receiver, through the predetermined channel according to the poll frame transmission sequence comprised in the polling list made by the polling list making unit (see paragraph 0008, lines 1-30, and fig. 1). As shown the Access point 105 is serving plurality of mobile stations 101-103, The HC that coupled with the AP 105 transmit a poll frame which consists of bandwidth allocation among the mobile station contenders 101-103 after the HC received the RR frames from each of the mobile stations 101-103 in randomly received sequence. However, Sherman and Haartsen did not disclose the method of a polling frame making request unit, which requests to make the polling list when the polling list is not made or when all reservation request frames are not received from the stations having transmitted the reservation request frames during the controlled contention interval. Yew et al. from the same or similar fields of endeavor teaches the method of a polling frame making request unit, which requests to make the polling list when the polling list is not made or when all reservation request frames are not received from the stations having transmitted the reservation request frames during the controlled contention

interval (see paragraph 0092, lines 1-6). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Yew et al. in the network of Sherman and Haartsen. The motivation for using the method as taught by Yew et al. in the network of Sherman and Haartsen being that it gives reliable service to every contending stations.

Regarding claims 13, and 29, Sherman disclosed the method of transmits a poll frame to each of the stations, having transmitted the reservation request frames that are received, through the predetermined channel according to the poll frame transmission sequence comprised in the polling list (see paragraph 0008, lines 1-30, and fig. 1). As shown the Access point 105 is serving plurality of mobile stations 101-103, The HC that coupled with the AP 105 transmit a poll frame which consists of bandwidth allocation among the mobile station contenders 101-103 after the HC received the RR frames from each of the mobile stations 101-103 in randomly received sequence; and when the station polling list making apparatus receives the poll frame transmitted through the predetermined channel from the coordinator polling list making apparatus according to the polling frame transmission sequence comprised in the polling list, the station polling list making apparatus transmits the data frame to a destination station among the stations through the predetermined channel during a data transmitting/receiving period designated by the poll frame ( see paragraph 0058, lines 1-15). The contenders responded after the received of the RR frame by sending messages in the CCI. Sherman and Haartsen did not disclose the method of the coordinator polling list making apparatus requests to make the polling list when the polling list is not made or

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when all reservation request frames are not received from the stations having transmitted the reservation request frames during the controlled contention interval. Yew et al. from the same or similar fields of endeavor teaches the method of a polling frame making request unit, which requests to make the polling list when the polling list is not made or when all reservation request frames are not received from the stations having transmitted the reservation request frames during the controlled contention interval (see paragraph 0092, lines 1-6). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Yew et al. in the network of Sherman and Haartsen. The motivation for using the method as taught by Yew et al. in the network of Sherman and Haartsen being that it gives reliable service to every contending stations.

Regarding to claims 3, 14, 19, and 30 Sherman disclosed the method of a length of the controlled contention interval is proportional to the number of stations on the network (see paragraph 0040, lines 10-25). Although the reference did not explicitly mention about length of CCI is proportional to number of stations, however any one of ordinary skill in the art is able to do it.

Regarding to claims 4, 15, 20, 31 the network is a basic service set defined in IEEE 802.11 wireless LAN standards (see paragraph 0005, line 1-5).

7. Claims 5, 16, 21, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman (Pub No.: 2003/0161340), in view of Haartsen (Pat No.:

6973067), and Yew et al. (Pub No.: 2003/0108059), as applied to claim 4 above, and further in view of Ho et al. (Pat No.: 7151762).

For claims 5, 16, 21, and 32 Yew et al. disclosed the method of the controlled contention frame comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID field, a controlled contention interval length field, and a frame inspection sequence field (Yew et al. see fig. 4a); the poll frame comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID field, a quality of service control field, a data transmitting/receiving period length field, and a frame inspection sequence field; and the quality of service control field indicates a data rate, a burst size, a delay bound, and a jitter bound (Yew et al. see fig. 4c and 4d). However, Yew et al. did not disclose the method of the reservation request frame comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID field, a quality of service control field, an association ID field, and a frame inspection sequence field. Ho et al. from the same or similar fields of endeavor teaches the method of the reservation request frame comprises a frame control field, a period/ID field, a receiver address field, a basic service set ID field, a quality of service control field, an association ID field, and a frame inspection sequence field (Ho et al. see fig. 11c). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Ho et al. in the network of Sherman, Haartsen, and Yew et al. The motivation for using the method as taught by Ho et al. in the network of Sherman, Haartsen, and Yew et al. being that improves the transmission speed in the system.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kan Yuen whose telephone number is 571-270-1413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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